

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 9950	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/DE99/03474	International filing date (day/month/year) 02 November 1999 (02.11.99)	Priority date (day/month/year) 03 November 1998 (03.11.98)
International Patent Classification (IPC) or national classification and IPC C23G 1/36		
Applicant EILENBURGER ELEKTROLYSE- UND UMWELTTECHNIK GMBH		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 30 May 2000 (30.05.00)	Date of completion of this report 29 September 2000 (29.09.2000)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/DE99/03474

I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

- ☐ the international application as originally filed.
- ☒ the description, pages 1-9, as originally filed,
 pages _____, filed with the demand,
 pages _____, filed with the letter of _____,
 pages _____, filed with the letter of _____.
- ☒ the claims, Nos. 1-15, as originally filed,
 Nos. _____, as amended under Article 19,
 Nos. _____, filed with the demand,
 Nos. _____, filed with the letter of _____,
 Nos. _____, filed with the letter of _____.
- ☒ the drawings, sheets/fig 1/1, as originally filed,
 sheets/fig _____, filed with the demand,
 sheets/fig _____, filed with the letter of _____,
 sheets/fig _____, filed with the letter of _____.

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-15	YES
	Claims		NO
Inventive step (IS)	Claims	1-15	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-15	YES
	Claims		NO

2. Citations and explanations

Although pickling solutions based on sulphuric acid with the addition of iron (III) sulphate as an oxidising agent are known *per se* (see, for example, US-A-2 318 559 or EP-A-0 794 269), none of the documents cited in the international search report discloses a recycling pickling process using an iron (III) sulphate additive followed by copper regeneration in an electrolytic cell. The known processes involve the addition of $\text{Cr}_2(\text{SO}_4)_3$ with sulphuric acid, or with iron (III) chloride but without sulphuric acid (US-A-3 761 369 or EP-A-0 396 984), or without iron (III) sulphate but with peroxide sulphates. Such a process is disclosed in DE-A 195 06 832, which is considered to be the closest prior art. In comparison with the said prior art, the invention according to Claim 1 of the present application has the advantage that the same pickling results can be achieved with smaller quantities of peroxide sulphates or none at all, which means that decomposition losses are slight and higher yields can be obtained. Moreover, the range of uses is increased because the same process can be used to obtain very different redox potentials, and hence for the first time it is possible to pickle copper and various copper alloys using a pickling solution of the same basic composition. The application therefore meets the requirements of PCT Article 33(2)-(4).